

Customer No.: 31561  
Application No.: 10/605,399  
Docket No.: 11853-US-PA

### AMENDMENTS

#### To the Claims:

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

Claim 1 (currently amended) A non-coherent frequency shift keying transmitting circuit for up-converting a baseband signal to a radio frequency signal, comprising:  
a micro processing unit, for receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;  
a frequency synthesizer using interpolation and a linear feedback shift register, coupled to said micro processing unit, for synthesizing said digital signal sequence to a plurality of synthesized signals;  
a first oscillator, coupled to said frequency synthesizer, for up-converting said plurality of synthesized signals to an intermediate frequency signal;  
a first filter, coupled to said first oscillator, for removing a noise of said intermediate frequency signal;  
a digital-analog converter coupled to said first filter;  
a second oscillator, coupled to said digital-analog converter, for up-converting to the radio frequency signal;  
a second filter, coupled to said second oscillator, for removing a noise of said radio frequency signal; and

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a power amplifier coupled to said second filter.

**Claim 2 (original)** The transmitting circuit of claim 1, wherein said frequency synthesizer is a digital frequency synthesizer.

**Claim 3 (canceled)**

**Claim 4 (original)** The transmitting circuit of claim 1, wherein said synthesized signals are two signals.

**Claim 5 (original)** The transmitting circuit of claim 1, wherein said first oscillator is a numerical controlled oscillator.

**Claim 6 (original)** The transmitting circuit of claim 1, wherein said first filter is a cascaded integrator-comb filter.

**Claim 7 (original)** The transmitting circuit of claim 1, wherein said second oscillator is a local oscillator.

**Claim 8 (original)** The transmitting circuit of claim 1, wherein said second filter is an analog band-pass filter.

**Claim 9 (original)** The transmitting circuit of claim 1, further comprising a transmitting end coupled to said power amplifier.

**Claims 10 (currently amended)** A non-coherent frequency shift keying transmitting circuit for up-converting a baseband signal to a radio frequency signal, comprising:

a micro processing unit, receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;

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an intermediate frequency processor, coupled to said micro processing unit, up-converting said digital signal sequence to an intermediate frequency signal; and

a radio frequency processor, coupled to said intermediate frequency processor, up-converting said intermediate frequency signal to a radio frequency signal;

wherein said intermediate frequency processor comprises a frequency synthesizer using interpolation and a linear feedback shift register, coupled to said micro processing unit, synthesizing said digital signal sequence to a plurality of synthesized signals.

Claim 11 (currently amended) The transmitting circuit of claim 10, wherein said intermediate frequency processor further comprises:

~~a frequency synthesizer, coupled to said micro processing unit, synthesizing said digital signal sequence to a plurality of synthesized signals;~~

a first oscillator, coupled to said frequency synthesizer, up-converting said plurality of synthesized signals to an intermediate frequency signal;

a first filter, coupled to said first oscillator, removing a noise of said intermediate frequency signal; and

a digital-analog converter coupled to said first filter.

Claim 12 (original) The transmitting circuit of claim 10, wherein said radio frequency processor further comprises:

a second oscillator, coupled to said digital-analog converter, for up-converting to a radio frequency signal;

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a second filter, coupled to said second oscillator, for removing a noise of said radio frequency signal; and

a power amplifier, coupled to said second filter.

Claim 13 (original) The transmitting circuit of claim 11, wherein said frequency synthesizer is a digital frequency synthesizer.

Claim 14 (canceled)

Claim 15 (original) The transmitting circuit of claim 11, wherein said synthesized signals are two signals.

Claim 16 (original) The transmitting circuit of claim 11, wherein said first oscillator is a numerical controlled oscillator.

Claim 17 (original) The transmitting circuit of claim 11, wherein said first filter is a cascaded integrator-comb filter.

Claim 18 (original) The transmitting circuit of claim 12, wherein said second oscillator is a local oscillator.

Claim 19 (original) The transmitting circuit of claim 12, wherein said second filter is an analog band-pass filter.

Claim 20 (original) The transmitting circuit of claim 12, further comprising a transmitting end coupled to said power amplifier.

Claim 21 (canceled)

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Claim 22 (currently amended) A method of non-coherent frequency shift keying transmission, for up-converting a baseband signal to a radio frequency signal, comprising: receiving said baseband signal and generating a digital signal sequence corresponding to said baseband signal;

using interpolation and a linear feedback shift register to synthesize synthesizing said digital signal sequence to a plurality of synthesized signals;

up-converting said plurality of synthesized signals to an intermediate frequency signal with a first oscillating method;

removing a noise of said intermediate frequency signal with a first filtering method;

converting said noise-removed intermediate frequency signal to an analog signal;

up-converting said analog signal to the radio frequency signal with a second oscillating method; [[and]]

removing a noise of said radio frequency signal with a second filtering method; and amplifying said noise-removed radio frequency signal and transmitting said amplified radio frequency signal.

Claim 23 (original) The method of claim 22, wherein said step of synthesizing said digital signal sequence to synthesized signals is performed by a digital frequency synthesizing method.

Claim 24 (original) The method of claim 22, wherein said first oscillating method is a numerical controlled oscillating method.

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**Claim 25 (original)** The method of claim 22, wherein said first filtering is a cascaded integrator-comb filtering method.

**Claim 26 (original)** The method of claim 22, wherein said second oscillating method is a local oscillating method.

**Claim 27 (original)** The method of claim 22, wherein said second filtering method is an analog band-pass filtering method.